

IN THE CLAIMS

1. (currently amended) A drill assembly, comprising:

an intervertebral disc replacement device including first and second members for insertion into an intervertebral disc space of a spinal column, the first and second members being separable from each other, the first member including a first articulation surface and a first flange having at least one first ~~through-bone~~ screw hole and at least one first mounting screw hole and the second member including a second articulation surface and a second flange having at least one second ~~through-bone~~ screw hole and at least one second mounting screw hole, the first and second articulation surfaces allowing for movement of the first member with respect to the second member;

an insertion plate removably and directly connected with the first and second mounting screw holes of the first and second members for maintaining the first and second articulation surfaces of the first and second members in registration with one another, the insertion plate including a perimeter and a first alignment element, wherein the perimeter does not extend over the first and second bone screw holes when the insertion plate is connected with the first and second mounting screw holes; and

a drill guide removably connected with at least the insertion plate, the drill guide including:

a shaft having a proximal end and a distal end; and

a guide member disposed at the distal end of the shaft and operable to engage the insertion plate, wherein the guide member includes at least one guide bore aligned with one of the first or second ~~through-bone~~ screw holes and an area of a vertebral bone of the intervertebral disc space to which one of the first and second members of the intervertebral disc

replacement device is to be attached and a second alignment element engaged with the first alignment element of the insertion plate.

2. (previously presented) The drill assembly of claim 1, wherein the first alignment element and the second alignment element enable a target orientation of a longitudinal axis of the guide bore relative to at least one of the vertebral bone and one of the first and second members of the intervertebral disc replacement device.

3. (previously presented) The drill assembly of claim 1, wherein one of the first alignment element and the second alignment element includes an alignment stem and the other of the first alignment element and the second alignment element includes an alignment bore, the alignment stem being receivable within the alignment bore to enable the target orientation of the longitudinal axis of the guide bore.

4. (currently amended) The drill assembly of claim 3, wherein:

the first member of the intervertebral disc replacement device includes a first vertebral contact surface and the first ~~through-bone screw~~ hole is capable of receiving a bone screw for fastening the first member to the vertebral bone of the spinal column; and

the guide member of the drill guide further includes a third alignment element operable to engage the first ~~through bone screw~~ hole of the first flange when the alignment stem is received within the alignment bore to further enable the target orientation of the longitudinal axis of the guide bore.

5. (currently amended) The drill assembly of claim 4, wherein the guide bore is disposed at least partially through the third alignment element such that the target orientation of the longitudinal axis of the guide bore is directed through the first ~~through~~ bone screw hole.

6. (previously presented) The drill assembly of claim 3, wherein:

the guide member includes a posteriorly directed surface and a spaced apart anterior directed surface;

the second alignment element of the guide member includes the alignment bore extending from the posteriorly directed surface at least partially through the guide member toward the anteriorly directed surface; and

the second alignment element of the insertion plate includes the alignment stem extending in an anterior direction for engagement with the alignment bore.

7. (previously presented) The drill assembly of claim 6, wherein the alignment bore has a longitudinal axis that is offset from a longitudinal axis of the shaft.

8. (currently amended) The drill assembly of claim 6, wherein:

the first member of the intervertebral disc replacement device includes a first vertebral contact surface and at least two first ~~through~~ bone screw holes for receiving respective bone screws for fastening the first member to the vertebral bone of the spinal column; and

the guide member of the drill guide further includes at least third and fourth alignment elements extending transversely from the posteriorly directed surface of the guide

member and each being operable to engage a respective one of the first ~~through-bone screw~~ holes of the first flange when the alignment stem is received within the alignment bore to further enable the target orientation of the longitudinal axis of the guide bore.

9. (currently amended) The drill assembly of claim 8, wherein the guide member includes at least two guide bores, each being disposed at least partially through respective ones of the third and fourth alignment elements such that respective target orientations of longitudinal axes of the guide bores are directed through respective ones of the first ~~through-bone screw~~ holes.

10. (currently amended) A drill assembly, comprising:
an intervertebral disc replacement device including first and second members for insertion into an intervertebral disc space of a spinal column, the first and second members being separable from each other, the first member including a first articulation surface and a first flange having at least one first ~~through-bone screw~~ hole and at least one first mounting screw hole and the second member including a second articulation surface and a second flange having at least one second ~~through-bone screw~~ hole and at least one first mounting screw hole, the first and second articulation surfaces allowing for movement of the first member with respect to the second member;

an insertion plate removably and directly connected with the first and second mounting screw holes of the first and second members for maintaining the first and second articulation surfaces of the first and second members in registration with one another, the insertion plate including a perimeter and a

first alignment element, wherein the perimeter does not extend over the first and second bone screw holes when the insertion plate is connected with the first and second mounting screw holes; and

a drill guide removably connected with at least the insertion plate, the drill guide including:

a shaft having a proximal end and a distal end;
and

a guide member disposed at the distal end of the shaft and including at least one guide bore, a second alignment element of the guide member engaged with the first alignment element of the insertion plate,

wherein the guide member is operable to achieve at least first and second alignment modes with respect to the insertion plate,

in the first alignment mode, the guide member is operable to engage the insertion plate such that the at least one guide bore aligns with the first ~~through~~bone screw hole of the first member and an area of a first vertebral bone of the intervertebral disc space to which the first member of the intervertebral disc replacement device is to be attached, and

in the second alignment mode, the guide member is operable to engage the insertion plate such that the at least one guide bore aligns with the second ~~through~~bone screw hole of the second member and an area of a second vertebral bone of the intervertebral disc space to which the second member of the intervertebral disc replacement device is to be attached.

Claim 11 (canceled)

12. (previously presented) The drill assembly of claim 10, wherein one of the first alignment element and the second

alignment element includes an alignment stem and the other of the first alignment element and the second alignment element includes an alignment bore, the alignment stem being receivable within the alignment bore to enable rotational adjustment of the guide member relative to the insertion plate and to achieve the first and second alignment modes.

13. (currently amended) The drill assembly of claim 10, wherein:

the first member of the intervertebral disc replacement device includes a first vertebral contact surface, and the first ~~through-bone screw~~ hole is capable of receiving a bone screw for fastening the first member to the first vertebral bone of the spinal column;

the second member of the intervertebral disc replacement device includes a second vertebral contact surface, and the second ~~through-bone screw~~ hole is capable of receiving a bone screw for fastening the second member to the second vertebral bone of the spinal column; and

the guide member of the drill guide further includes at least a third alignment element operable to: (i) engage the first ~~through-bone screw~~ hole of the first flange when the alignment stem is received within the alignment bore in the first alignment mode to further enable a first target orientation of the longitudinal axis of the guide bore, and (ii) engage the second ~~through-bone screw~~ hole of the second flange when the alignment stem is received within the alignment bore in the second alignment mode to further enable a second target orientation of the longitudinal axis of the guide bore.

14. (currently amended) The drill assembly of claim 13, wherein the guide bore is disposed at least partially through

the third alignment element such that the target orientations of the longitudinal axis of the guide bore may be directed through the respective first or second ~~through-bone screw~~ holes in the first and second alignment modes.

15. (previously presented) The drill assembly of claim 10, wherein:

the guide member includes a posteriorly directed surface and a spaced apart anteriorly directed surface;

the second alignment element of the guide member includes the alignment bore extending from the posteriorly directed surface at least partially through the guide member toward the anteriorly directed surface; and

the second alignment element of the insertion plate includes the alignment stem extending in an anterior direction for engagement with the alignment bore.

16. (previously presented) The drill assembly of claim 15, wherein the alignment bore has a longitudinal axis that is offset from a longitudinal axis of the shaft.

17. (currently amended) The drill assembly of claim 15, wherein:

the first member of the intervertebral disc replacement device includes a first vertebral contact surface and at least two first ~~through-bone screw~~ holes for receiving respective bone screws for fastening the first member to the first vertebral bone of the spinal column;

the second member of the intervertebral disc replacement device includes a second vertebral contact surface and at least two second ~~through-bone screw~~ holes for receiving

respective bone screws for fastening the second member to the second vertebral bone of the spinal column; and

the guide member of the drill guide further includes at least a third and fourth alignment elements each operable to:

- (i) engage a respective one of the first ~~through-bone screw~~ holes of the first flange when the alignment stem is received within the alignment bore in the first alignment mode, and (ii)
- engage a respective one of the second ~~through-bone screw~~ holes of the second flange when the alignment stem is received within the alignment bore in the second alignment mode.

18. (currently amended) The drill assembly of claim 17, wherein the guide member includes at least two guide bores, each being disposed at least partially through respective ones of the third and fourth alignment elements such that

in the first alignment mode, first and second longitudinal axes of the guide bores are directed through respective ones of the first ~~through-bone screw~~ holes of the first flange of the first member of the intervertebral disc replacement device, and

in the second alignment mode, first and second longitudinal axes of the guide bores are directed through respective ones of the second ~~through-bone screw~~ holes of the second flange of the second member of the intervertebral disc replacement device.

Claims 19-24. (canceled)

25. (new) A drill assembly, comprising:

an intervertebral disc replacement device including first and second members for insertion into an intervertebral disc space of a spinal column, the first member including a

first articulation surface, a first vertebral contact surface, and a first flange having at least one first through hole capable of receiving a bone screw for fastening the first member to the vertebral bone of the spinal column and the second member including a second articulation surface and a second flange having at least one second through hole, the first and second articulation surfaces allowing for movement of the first member with respect to the second member;

an insertion plate removably connected with the first and second members for maintaining the first and second articulation surfaces of the first and second members in registration with one another, the insertion plate including an alignment stem or an alignment bore; and

a drill guide removably connected with at least the insertion plate, the drill guide including:

a shaft having a proximal end and a distal end; and

a guide member disposed at the distal end of the shaft and operable to engage the insertion plate, wherein the guide member includes at least one guide bore aligned with one of the first or second bone screw holes and an area of a vertebral bone of the intervertebral disc space to which one of the first and second members of the intervertebral disc replacement device is to be attached, and the other of the alignment stem or the alignment bore, the alignment stem being receivable within the alignment bore to enable the target orientation of the longitudinal axis of the guide bore, the guide member of the drill guide further including an alignment element operable to engage the first bone screw hole of the first flange when the alignment stem is received within the alignment bore to further enable the target orientation of the longitudinal axis of the guide bore, the guide bore at least partially disposed through the alignment element such that the target orientation of the

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longitudinal axis of the guide bore is directed through the first through hole.